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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,499	08/04/2006	Yoshihiro Tanaka	060563	9219
23850	7590	10/28/2008	EXAMINER	
KRATZ, QUINTOS & HANSON, LLP 1420 K Street, N.W. Suite 400 WASHINGTON, DC 20005				HERRING, BRENT W
3633		ART UNIT		PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/588,499	TANAKA, YOSHIHIRO	
	<b>Examiner</b>	<b>Art Unit</b>	
	BRENT W. HERRING	3633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 08 August 2008.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-25 is/are pending in the application.  
 4a) Of the above claim(s) 8,9,16,18 and 19 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-7,10-15,17 and 20-25 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 04 August 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>08042006</u> .	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1-7, 10-15, 17, 20-25 is acknowledged.
2. Claims 8-9, 6, 18-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 8, 2008.

### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on August 4, 2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Objections***

4. Claim 17 is objected to because of the following informalities: applicant is inconsistent between spelling out numbers and in providing just the numeral. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). In the present instance, claim 17 recites the broad recitation, "a width not less than five folds and not more than 20 folds," and the claim also recites, "preferably not less than ten folds and not more than 15 folds of a diameter of the first wire rod," which is the narrower statement of the range/limitation.
8. Furthermore, the definition of the unit "fold" cannot be resolved by the examiner.

**Claims are examined as best understood.**

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 10, and 13-15, 20, 21 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Osaka, JP 7,238,690, herein referred to as '690.

Regarding claim 10:

'690 discloses a shearing force reinforced structure comprising: an existing reinforced concrete structure object (a); a first shearing force reinforced member (c) arranged inside a first reinforced member insertion hole and a second shearing force reinforced member arranged inside a second reinforced member insertion hole formed in the reinforced concrete structure object (see Fig. 10); and a filler (18) filled in the first reinforced member insertion hole and the second reinforced member insertion hole, wherein the first shearing force reinforced member comprises a first wire rod (7), and a first base end fixation member (8) formed at a base end of the first wire rod and having a width larger than a diameter of the first wire rod (see Fig. 8).

Regarding claim 13:

'690 discloses claim 10, wherein the second shearing force reinforced member comprises a second wire rod (see Fig. 10, note that the plurality of members are identical in structure), and a second base end fixation member (8) formed at a base end of the second wire rod and having a width larger than a diameter of the second wire rod (see Fig. 8), and wherein the first base end fixation member has a width larger than that of the second base end fixation member.

Regarding claims 14 and 15:

'690 discloses claim 13, wherein at top ends of the first shearing force reinforced member and the second shearing force reinforced member are

respectively formed a first top end fixation member (9) having a width larger than a diameter of the first wire rod and a second top end fixation member (9, see Figs. 1, 10) having a width larger than a diameter of the second wire rod.

Regarding claim 20:

'690 discloses a shearing force reinforced member (see Fig. 9) arranged inside a reinforced member insertion hole formed in an existing reinforced concrete structure object, the member comprising: a wire rod (c) having a length shorter than a total length of the reinforced member insertion hole (see Fig. 9); and a base end fixation member (8) and a top end fixation member (9) respectively having width sizes larger than a diameter of the wire rod (see Fig. 1) and respectively fixed at a base end and top end of the wire rod.

Regarding claim 21:

'690 discloses claim 20, wherein a width size of the top end fixation member is formed to be 120% to 250% of a diameter of the wire rod (see Fig. 1, by visual inspection).

Regarding claim 25:

'690 discloses claim 20, wherein in the base end fixation member, at a base end of the wire rod is fixed a steel plate of which a shape is a circle (see Fig. 2), a thickness size is 30% to 120% of a diameter of the wire rod (by visual inspection of Fig. 1), and a width size is 130% to 300% of a diameter of the wire rod (also by visual inspection of Fig. 1).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 1-5, 11-12, 17, 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaka ('690) in view of Tuska, US 3,599,379.

Regarding claim 1:

'690 discloses a shearing force reinforced structure comprising: an existing reinforced concrete structure object (a, see Fig. 5); a shearing force reinforced member (c, see Fig. 1) mainly made of a wire rod, the wire rod being arranged inside a reinforced member insertion hole formed at the reinforced concrete structure object (see Fig. 8); and a filler (18) filled in the reinforced member insertion hole, wherein the reinforced member insertion hole comprises a general part having an inner diameter larger than a diameter of the wire rod (see Fig. 8).

'690 does not expressly disclose wherein there is a base end width broadening part formed at a base end of the reinforced member insertion hole and having an inner diameter larger than the general part (12).

'379 discloses a shearing force reinforced structure (see Fig. 6) wherein there is a base end (see fill section 73) of the reinforced member insertion hole (73) having an inner diameter larger than the general part (see Fig. 6).

'690 and '379 are analogous art because they are from the same field of concrete structures with hollow sections holding anchoring members and surrounded by fill material.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the wider base end of the hole as taught by '379 in the structure of '690.

The motivation to combine would have been to create a tight lock between the fill material and the outer concrete section (col. 4, Ins. 70-75 of '379).

Regarding claim 2:

'690 in view of '379 discloses claim 1, and '690 further discloses wherein a top end width broadening part (13, see fig. 5) having an inner diameter larger than the general part is formed at a top end of the reinforced member insertion hole.

Regarding claim 3:

'690 in view of '379 discloses claim 1, and '690 further discloses wherein the shearing force reinforced member comprises a shearing force reinforcing bar

of the wire rod; and a base end fixation member that is formed at a base end of the shearing force reinforcing bar and of which a section shape is larger than a reinforcing bar diameter of the shearing force reinforced reinforcing bar.

Regarding claim 4:

'690 in view of '379 discloses claim 3, and '690 further discloses wherein at a top end of the shearing force reinforcing bar is formed a top end fixation member of which a section shape is larger than a reinforcing bar diameter of the shearing force reinforced reinforcing bar.

Regarding claim 5:

'690 in view of '379 discloses claim 1, but does not expressly disclose wherein an adhesion strength of the filler is not less than 60 N/mm<sup>2</sup> in a case that the wire rod is a deformed reinforcing bar.

In the instant case, the prior art applies epoxy resin (18) as the filler to inhibit separation of the concrete (a) and the wire rod (c).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to contrive any number of desirable ranges for the adhesion strength limitation disclosed by Applicant, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Further, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

The motivation to provide a minimum value for the adhesion strength would be to anticipate maximum forces imposed upon the joint.

Regarding claim 11:

'690 discloses claim 10, wherein the first reinforced member insertion hole comprises a first general part having an inner diameter larger than a diameter of the first wire rod, but does not expressly disclose wherein a first base end width broadening part formed at a base end of the first reinforced member insertion hole and having an inner diameter larger than the first general part.

'379 discloses a shearing force reinforced structure (see Fig. 6) wherein there is a base end (see fill section 73) of the reinforced member insertion hole (73) having an inner diameter larger than the general part (see Fig. 6).

'690 and '379 are analogous art because they are from the same field of concrete structures with hollow sections holding anchoring members and surrounded by fill material.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the wider base end of the hole as taught by '379 in the structure of '690.

The motivation to combine would have been to create a tight lock between the fill material and the outer concrete section (col. 4, Ins. 70-75 of '379).

Regarding claim 12:

'690 in view of '379 discloses claim 11, and '690 further discloses wherein at a top end of the first reinforced member insertion hole (12) is formed a first top

end width broadening part (13) having an inner diameter larger than the first general part (see Fig. 5).

Regarding claim 17:

'690 in view of '379 discloses claim 11, wherein in the first base end fixation member, at a base end of the first wire rod is fixed a plate member, but does not expressly disclose wherein configured with a width not less than five folds and not more than 20 folds, preferably not less than ten folds and not more than 15 folds of a diameter of the first wire rod.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to contrive any number of desirable ranges for the base end width limitation disclosed by Applicant, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Further, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

The motivation to have a specific width for the base end fixation member would have been to impede removal from the hole while also ensuring fit within the hole before the application of the filler material.

Regarding claims 22-24:

'690 discloses claim 20 wherein the wire rod is configured with a thread reinforcing bar (see Fig. 1), but '690 does not expressly disclose wherein at a top end of the wire rod a male thread member is processed and integrally formed,

and wherein the top end fixation member is configured with a steel plate of which a shape is a circle or a polygon, a thickness size is 80% to 120% of a diameter of the wire rod, and a width size is 200% to 300% of the diameter of the wire rod; a female thread is formed in the steel plate; and by screwing the male thread member of the wire rod into the female thread, the top end fixation member is fixed at the top end of the wire rod.

'379 discloses a shearing force reinforcing member, wherein a top end of the wire rod is a male thread member (see Fig. 6) integrally formed and processed, and wherein a top end fixation member (70, see Fig. 6) is configured with a steel plate of which a shape is a polygon, a thickness size is 80% to 120% of a diameter of the wire rod (by visual inspection of Fig. 6), and a width size is 200% to 300% of the diameter of the wire rod; a female thread is formed in the steel plate (for threaded engagement with the wire rod, 67); and by screwing the male thread member of the wire rod into the female thread, the top end fixation member is fixed at the top end of the wire rod (see Fig. 6).

'690 and '379 are analogous art because they are from the same field of wire rods inserted in concrete bases to resist external forces.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the top end fixation structure of '379 for the end fixation structure of '690.

The motivation to combine would have been to provide for a removable top end that once removed, provides for a joint to form an anchor.

14. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaka ('690) in view of Rossi, US 6,860,935.

Regarding claims 6 and 7:

'690 discloses claim 1, but '690 does not expressly disclose using a fiber reinforced cement as the filler and the process and composition in forming the fiber reinforced cementitious composite material.

'935 discloses a cementitious composite material comprised of a fiber/cement composite, a pozzolan reaction particle, and a plasticizer, and water (see abstract).

'690 and '935 are analogous art because they relate to the field of cementitious mixtures exposed to forces.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the composition of '935 as the filler in '690.

The motivation to combine would have been to provide for added strength and reinforcement.

The motivation to substitute would have been to strengthen the composite mixture in order to sustain a higher shear force load.

Neither '690 nor '935 disclose the exact dimensions and quantities of the components disclosed in claim 7.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to contrive any number of desirable ranges for the fiber diameters, volume ratios, cement aggregate, and the pozzolan particle

limitations disclosed by Applicant, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Further, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

In the instant case, the motivation to determine the optimum range would have been to provide adequate strength for the forces experienced by the concrete.

Furthermore, note that the determination of patentability in a product-by-process claim is based on the product itself, even though the claim may be limited and defined by the process. That is, the product in such a claim is unpatentable if it is the same as or obvious from the product of the prior art, even if the prior product was made by a different process.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRENT W. HERRING whose telephone number is (571)270-3661. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian E. Glessner can be reached on (571)272-6847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BWH/

bwh

/Robert J Canfield/

Supervisory Patent Examiner, Art Unit 3635